

Appl. No. 10/661,043  
Amdt. dated October 27, 2006  
Reply to Office Action of July 3, 2006

This listing of claims replaces all prior versions, and listings of claims in the instant application:

Listing of Claims:

1. to 27. (Cancelled)

28. (Previously Presented) A method of operating a computer system, said method comprising:

providing a program in memory, the program comprising at least one program unit, each program unit comprising an Application Programming Interface (API) definition file and an implementation, each API definition file defining items in its associated program unit that are made accessible to one or more other program units, each implementation comprising executable code corresponding to said API definition file said executable code comprising type specific instructions and data; and

performing a first verification prior to an installation of said program, comprising:

indicating a verification error when a first program unit implementation is not internally consistent; and

indicating a verification error when said first program unit implementation is inconsistent with a first program unit API definition file associated with said first program unit implementation.

29. (Previously Presented) The method of claim 28, further comprising:

enabling execution of said program after said first verification if no verification error is indicated; and

preventing the execution of said program after said first verification if a verification error is indicated.

GUNNISON, MCKAY &  
HODGSON, L.L.P.  
Garden West Office Plaza  
1900 Gardner Road, Suite 220  
Mountain, CA 95360  
(831) 653-2110  
Fax (831) 653-0008

Appl. No. 10/661,043  
Amdt. dated October 27, 2006  
Reply to Office Action of July 3, 2006

30. (Previously Presented) The method of claim 29, further comprising performing a second verification comprising verifying a second program unit that references said first program unit and makes no items available for one or more other program units, said second verification comprising:

indicating a verification error when the second program unit implementation is not internally consistent; and

indicating a verification error when said second program unit implementation is inconsistent with said first program unit API definition file.

31. (Previously Presented) The method of claim 30 wherein:

said first program unit comprises at least one additional implementation; and

said second verification comprises determining whether said at least one additional implementation is consistent with said first program unit API definition file.

32. (Previously Presented) The method of claim 29, further comprising performing a second verification comprising verifying a second program unit that references said first program unit, said second verification comprising:

indicating a verification error when the second program unit implementation is not internally consistent;

indicating a verification error when said second program unit implementation is inconsistent with the second program unit API definition file; and

indicating a verification error when said second program unit implementation is inconsistent with said first program unit API definition file.

GUNNISON, MCKAY &  
HODGSON, APC  
Garden Way, Suite 220  
1800 Olden Road, San Jose, CA 95140  
(408) 295-4490  
Fax (408) 295-4494

Appl. No. 10/661,043  
Amdt. dated October 27, 2006  
Reply to Office Action of July 3, 2006

33. (Previously Presented) A method of operating a computer system, said method comprising:

providing a program in memory, the program comprising at least one program unit, each program unit comprising an Application Programming Interface (API) definition file and an implementation, each API definition file defining items in its associated program unit that are made accessible to one or more other program units, each implementation comprising executable code corresponding to said API definition file, said executable code comprising type specific instructions and data; and

performing a first verification prior to execution of said program, comprising:

indicating a verification error when a program unit implementation is not internally consistent;

indicating a verification error when a program unit implementation is inconsistent with its API definition file; and

indicating a verification error when a program unit implementation is inconsistent with the API definition file of a program unit referenced by said program unit.

34. (Previously Presented) The method of claim 33, further comprising performing a second verification comprising verifying said program after at least one program unit has been verified at least once, said second verification comprising:

indicating a verification error when a program unit implementation is not internally consistent;

indicating a verification error when a program unit implementation is inconsistent with its API definition file; and

indicating a verification error when a program unit implementation is inconsistent with the API definition file of each program unit referenced by said program unit.

GUNNISON, MCKAY &  
HODGSON, LLP  
Corner Workforce Plaza  
12000 Golden Road, Suite 220  
Mountain, CA 91340  
(310) 454-0500  
Fax: (310) 455-0888

Appl. No. 10/661,043  
Amdt. dated October 27, 2006  
Reply to Office Action of July 3, 2006

35. (Previously Presented) A program storage device readable by a machine, embodying a program of instructions executable by the machine to perform a method for program verification, said method comprising:

providing a program in memory, the program comprising at least one program unit, each program unit comprising an Application Programming Interface (API) definition file and an implementation, each API definition file defining items in its associated program unit that are made accessible to one or more other program units, each implementation comprising executable code corresponding to said API definition file, said executable code comprising type specific instructions and data; and

performing a first verification prior to an installation of said program, comprising:

indicating a verification error when a first program unit implementation is not internally consistent;

indicating a verification error when said first program unit implementation is inconsistent with a first program unit API definition file associated with said first program unit implementation.

36. (Previously Presented) The program storage device of claim 35, said method further comprising:

enabling execution of said program after said first verification if no verification error is indicated; and

preventing the execution of said program after said first verification if a verification error is indicated.

37. (Previously Presented) The program storage device of claim 36, said method further comprising performing a second verification comprising verifying a second program unit that references said first program unit and makes no items available

GUNNISON, MCKAY &  
HODGSON, LLP  
Canton West Office Plaza  
1200 Gunders Road, Suite 220  
Monterey, CA 93940  
(831) 655-0910  
Fax (831) 655-0911

Appl. No. 10/661,043  
Amdt. dated October 27, 2006  
Reply to Office Action of July 3, 2006

for one or more other program units, said second verification comprising:

indicating a verification error when the second program unit implementation is not internally consistent; and

indicating a verification error when said second program unit implementation is inconsistent with said first program unit API definition file.

38. (Previously Presented) The program storage device of claim 37 wherein:

said first program unit comprises at least one additional implementation; and

said second verification comprises determining whether said at least one additional implementation is consistent with said first program unit API definition file.

39. (Previously Presented) The program storage device of claim 36, said method further comprising performing a second verification comprising verifying a second program unit that references said first program unit, said second verification comprising:

indicating a verification error when the second program unit implementation is not internally consistent;

indicating a verification error when said second program unit implementation is inconsistent with the second program unit API definition file; and

indicating a verification error when said second program unit implementation is inconsistent with said first program unit API definition file.

40. (Previously Presented) A program storage device readable by a machine, embodying a program of instructions

GUNNISON, MCKAY &  
HODGSON, S.L.P.  
Garden Web Office  
1900 Century Street, Suite 120  
Mountain View, CA 94039  
(650) 655-0000  
Fax (650) 655-0648

Appl. No. 10/661,043  
Amdt. dated October 27, 2006  
Reply to Office Action of July 3, 2006

executable by the machine to perform a method for program verification, the method comprising:

providing a program in memory, the program comprising at least one program unit, each program unit comprising an Application Programming Interface (API) definition file and an implementation, each API definition file defining items in its associated program unit that are made accessible to one or more other program units, each implementation comprising executable code corresponding to said API definition file, said executable code comprising type specific instructions and data; and

performing a first verification prior to execution of said program, comprising:

indicating a verification error when a program unit implementation is not internally consistent;

indicating a verification error when a program unit implementation is inconsistent with its API definition file; and

indicating a verification error when a program unit implementation is inconsistent with the API definition file of a program unit referenced by said program unit.

41. (Previously Presented) The program storage device of claim 40, said method further comprising performing a second verification comprising verifying said program after at least one program unit has been verified at least once, said second verification comprising:

indicating a verification error when a program unit implementation is not internally consistent;

indicating a verification error when a program unit implementation is inconsistent with its API definition file; and

GUNNISON, MCKAY &  
HODGSON, LLP  
Gordon Woods Office Plaza  
1300 Golden Rd., Suite 220  
Mountain View, CA 94031  
(650) 655-4840  
(650) 655-0888

Appl. No. 10/661,043  
Amdt. dated October 27, 2006  
Reply to Office Action of July 3, 2006

indicating a verification error when a program unit implementation is inconsistent with the API definition file of each program unit referenced by said program unit.

42. (Previously Presented) A system for executing a software application, the system comprising:

a computing system that generates executable code, comprising means for providing a program in memory, the program comprising at least one program unit, each program unit comprising an Application Programming Interface (API) definition file and an implementation, each API definition file defining items in its associated program unit that are made accessible to one or more other program units, each implementation comprising executable code corresponding to said API definition file, said executable code comprising type specific instructions and data; and

means for performing a first verification prior to an installation of said program, comprising:

means for indicating a verification error when a first program unit implementation is not internally consistent;

means for indicating a verification error when said first program unit implementation is inconsistent with a first program unit API definition file associated with said first program unit implementation.

43. (Previously Presented) The computing system of claim 42, further comprising:

means for enabling execution of said program after said first verification if no verification error is indicated; and

means for preventing the execution of said program after said first verification if a verification error is indicated.

GUNNISON, MCKAY &  
HODGSON, LLP,  
Garden Way Office Plaza  
1000 Garden Road, Suite 220  
Mountain, CA 93940  
(831) 655-0880  
Fax (831) 655-0888

Appl. No. 10/661,043  
Amdt. dated October 27, 2006  
Reply to Office Action of July 3, 2006

44. (Previously Presented) The computing system of claim 43, further comprising:

means for performing a second verification comprising verifying a second program unit that references said first program unit and makes no items available for one or more other program units, said second verification comprising

means for indicating a verification error when the second program unit implementation is not internally consistent; and

means for indicating a verification error when said second program unit implementation is inconsistent with said first program unit API definition file.

45. (Previously Presented) The computing system of claim 44 wherein:

said first program unit comprises at least one additional implementation; and

said means for performing a second verification comprises a means for determining whether said at least one additional implementation is consistent with said first program unit API definition file.

46. (Previously Presented) The computing system of claim 43, further comprising means for performing a second verification comprising verifying a second program unit that references said first program unit, said means for performing said second verification comprising:

means for indicating a verification error when the second program unit implementation is not internally consistent;

means for indicating a verification error when said second program unit implementation is inconsistent with the second program unit API definition file; and

GUNNISON, MCKAY &  
HODGSON, L.L.P.  
Quinta West Office Plaza  
1900 Garden Road, Suite 220  
Monterey, CA 93940  
(831) 655-0550  
Fax (831) 655-0548

Appl. No. 10/661,043  
Amdt. dated October 27, 2006  
Reply to Office Action of July 3, 2006

means for indicating a verification error when said second program unit implementation is inconsistent with said first program unit API definition file.

47. (Previously Presented) A system for executing a software application, the system comprising:

a computing system that generates executable code, comprising means for providing a program in memory, the program comprising at least one program unit, each program unit comprising an Application Programming Interface (API) definition file and an implementation, each API definition file defining items in its associated program unit that are made accessible to one or more other program units, each implementation comprising executable code corresponding to said API definition file, said executable code comprising type specific instructions and data; and

means for performing a first verification prior to execution of said program, comprising:

means for indicating a verification error when a program unit implementation is not internally consistent;

means for indicating a verification error when a program unit implementation is inconsistent with its API definition file; and

means for indicating a verification error when a program unit implementation is inconsistent with the API definition file of each program unit referenced by said program unit.

48. (Previously Presented) The system of claim 47, further comprising means for performing a second verification comprising verifying said program after at least one program unit has been verified at least once, said means for performing said second verification comprising:

GUNNISON, MCKAY &  
HODGSON, LLP,  
Gardner Webb Office Plaza  
1900 Gardner Road, Suite 220  
Mountain, CA 95036  
(831) 655-0888  
Fax (831) 655-0888

Appl. No. 10/661,043  
Amdt. dated October 27, 2006  
Reply to Office Action of July 3, 2006

means for indicating a verification error when a program unit implementation is not internally consistent;

means for indicating a verification error when a program unit implementation is inconsistent with its API definition file; and

means for indicating a verification error when a program unit implementation is inconsistent with the API definition file of each program unit referenced by said program unit.

49. (Cancelled)

50. (Cancelled)

51. (Cancelled)

52. (Cancelled)

53. (Cancelled)

54. (Cancelled)

GUNNISON, MCKAY &  
HODGSON, L.L.P.  
Garden Way Office Park  
1500 Charles Road, Suite 220  
Mountain, CA 91340  
(310) 455-3140  
Fax (310) 655-0888